

Appendix 1

Percent Identity

	1	2	3	4	5	6	7	8	
1	■	32.0	25.4	24.8	24.9	51.4	25.6	47.9	1
2	122.6	■	26.0	25.3	24.9	34.8	25.2	31.8	2
3	146.8	127.4	■	59.8	60.2	26.4	65.0	20.9	3
4	141.2	140.1	53.3	■	77.8	25.0	55.1	21.4	4
5	145.2	138.3	51.2	21.5	■	25.4	53.1	22.5	5
6	68.2	114.3	138.1	148.6	140.5	■	27.2	52.1	6
7	149.2	135.5	42.7	63.3	65.9	132.7	■	24.2	7
8	70.6	118.0	157.3	150.5	158.9	658.7	145.0	■	8
	1	2	3	4	5	6	7	8	

Divergence

BB-1085 SEQ ID NO:10

Chlamydomonas PDI (GI 2708314)

Alfalfa PDI (GI 266743)

Maize PDI (GI 1709619)

Wheat PDI (GI 1709620)

Arabidopsis PDI (GI 9759328)

Arabidopsis PDI (GI 12323392)

Arabidopsis PDI (GI 4678297)

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Consensus #1									
10	20	30	40	50	60				
1	NRW	---	---	---	---	BB1085 SEQ ID NO 10	Chlamydomonas PDI (GI 2708314)		
1	AA-KNVAIFGLLSLL	RVPS	---	---	---	Alfalfa PDI (GI 266743)			
1	RAIRKAWISLLALAV	SA	---	---	---	Maize PDI (GI 1709619)			
1	SAI	AKWISLLALAV	SA	---	---	Wheat PDI (GI 1709620)			
1	AFRV	---	---	---	---	Arabidopsis PDI (GI 9759328)			
1	AFKGFACFSILLLS	RVSS	---	---	---	Arabidopsis PDI (GI 12323392)			
1	ASSSGSISLLLS	RVSP	---	---	---	Arabidopsis PDI (GI 4678297)			
Consensus #1									
70	80	90	100	110	120				
57	AAFTKHOEHAAS	DEYED	---	---	---	BB1085 SEQ ID NO 10	Chlamydomonas PDI (GI 2708314)		
37	---	---	---	---	---	Alfalfa PDI (GI 266743)			
35	---	---	---	---	---	Maize PDI (GI 1709619)			
36	---	---	---	---	---	Wheat PDI (GI 1709620)			
41	---	---	---	---	---	Arabidopsis PDI (GI 9759328)			
55	SSSTGFEFEGGEE	DEDMYN	---	---	---	Arabidopsis PDI (GI 12323392)			
31	---	---	---	---	---	Arabidopsis PDI (GI 4678297)			
55	---	---	---	---	---				
Consensus #1									
130	140	150	160	170	180				
97	DETVK	---	---	---	---	BB1085 SEQ ID NO 10	Chlamydomonas PDI (GI 2708314)		
60	---	---	---	---	---	Alfalfa PDI (GI 266743)			
44	---	---	---	---	---	Maize PDI (GI 1709619)			
45	---	---	---	---	---	Wheat PDI (GI 1709620)			
50	---	---	---	---	---	Arabidopsis PDI (GI 9759328)			
114	---	---	---	---	---	Arabidopsis PDI (GI 12323392)			
40	---	---	---	---	---	Arabidopsis PDI (GI 4678297)			
110	---	---	---	---	---				
Consensus #1									
190	200	210	220	230	240				
156	---	---	---	---	---	BB1085 SEQ ID NO 10	Chlamydomonas PDI (GI 2708314)		
135	---	---	---	---	---	Alfalfa PDI (GI 266743)			
300	---	---	---	---	---	Maize PDI (GI 1709619)			
301	---	---	---	---	---	Wheat PDI (GI 1709620)			
106	---	---	---	---	---	Arabidopsis PDI (GI 9759328)			
167	---	---	---	---	---	Arabidopsis PDI (GI 12323392)			
96	---	---	---	---	---	Arabidopsis PDI (GI 4678297)			
162	---	---	---	---	---				

[illegible]

	310	320	330	340	350	360	Consensus #J
272	BS1085 SEQ ID NO 10
273	Chlaenodymus PDI (GI 2708314)
274	Alfalfa PDI (GI 266743)
275	Maize PDI (GI 1709619)
276	Wheat PDI (GI 1709620)
277	Arabidopsis PDI (GI 9759326)
278	Arabidopsis (GI 12323392)
279	Arabidopsis PDI (GI 4678297)

	370	380	390	400	410	420	Consensus #1
327	WT	DDUKADAE	INTVR	IS	K	Q	BD1085 SEQ ID NO 10
287	WT	DDUKADAE	INTVR	IS	K	Q	Chlamydomonas PDI (GI 2708314)
277	INFTTG	--GAES	SKTKYH	EQY	QCGVS	LVGDVE	Alfalfa PDI (GI 266743)
278	LNFTSG	--PPDS	KSAISA	GEF	QEI	IKALG	Maize PDI (GI 1709619)
282	LNFTSG	--PFES	KSAIYG	VEES	S	EDVK	Wheat PDI (GI 1709620)
330	SVTKSG	--SE	QTE	Q	Q	Q	Arabidopsis PDI (GI 9759328)
272	VNFTGA	--TAEL	AKSKYR	EVTS	N	QO	Arabidopsis (GI 12323392)
271	WT	DDUKADAE	INTVR	IS	K	Q	Arabidopsis PDI (GI 4678297)

	430	440	450	460	470	480	Consensus #1
383	GFYRNK	RHEFTADNVK	GVVDGTAQAVL	DEAN	DEVEDG	YKJ	BB1085 SQ ID NO 10
345	QUNSC	PAQVNP	KNALPTWLVVVG	QVPPVQVQ	QVQV	YV	Chilamydopsis PDI (G1 2708314)
332	QUNSC	PAQVNP	KNALPTWLVVVG	QVPPVQVQ	QVQV	YV	Alfalfa PDI (G1 266743)
333	-IQDGRK	-EAVHQRQD	QVAILKEVFDG	QVQV	QVQV	YV	Maize PDI (G1 1709613)
337	-IQDSGK	-EAVHQRQD	QVAILKEVFDG	QVQV	QVQV	YV	Wheat PDI (G1 1709620)
394	QVQV	QVQV	QVQV	QVQV	QVQV	QVQV	Arabidopsis PDI (G1 9755328)
327	-IQTPNK	-EAVHQRQD	QVAILKEVFDG	QVQV	QVQV	YV	Arabidopsis (G1 12323392)
384	QVQV	QVQV	QVQV	QVQV	QVQV	QVQV	Arabidopsis PDI (G1 4618297)

..V....K.VL.E.....HC.....P.....K.D.T.N..P.....										Consensus #1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Consensus #1: When all match the residue on the Consensus show the residue of the Consensus, otherwise show ''

Shade (with black at 40% fill) residues that match BB1085 SEQ ID NO 10 exactly.

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